placo
SAINT-GOBAIN

ENVIRONMENTAL PRODUCT DECLARATION

According to EN 15804:2012+A2:2019/ AC:2021 and ISO 14025:2006

Placo® X-Ray Protection

Version 02
Date of publication: 2018/07/03
Date of revision: 2023/12/12
Validity: 5 years
Valid until: 2028/12/10
Scope of the EPD®: Europe

EPD®
THE INTERNATIONAL EPD® SYSTEM

The International EPD
Programme operator: EPD International AB
Registration number:
S-P: 01334

ECO PLATFORM EPD VERIFIED

EPD VERIFIED

Manufacturer's address: C. del Príncipe de Vergara, 132, planta 8, 28002 Madrid, Spain

SAINT-GOBAIN

General Information

Company information

Manufacturer Saint-Gobain Placo Ibérica (hereinafter Placo®).
Production plant: San Martín PYL (San Martín de la Vega, Madrid).
Certification related to the management system: The product has been manufactured in plants with a certified management system in accordance with ISO 14001 and ISO 14006, ISO 50001, ISO 9001 and ISO 45001.
Programme used: International EPD System http\\www.environdec.com\
CPR used: EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declaration - core rules for the product category of construction product and The International EPD® System PCR 2019:14 version 1.3.1 for construction products and construction services
Prepared by: IVL Swedish Environmental Research Institute, EPD International Secretariat
UN CPC code: 37530 Articles of plaster or of compositions based on plaster
Declaration owner: Placo®
Product name and represented manufacturer: Placo® X-Ray Protection, manufactured by Placo®
EPD® performed by: Placo®
Contact: silvia.bailo@saint-gobain.com
Geographical scope of the EPD®: Europe
EPD® registration number: S-P-01334
Date of completion: 2023/12/12; **Validity date:** 2028/12/10
Demonstration of audit: an independent audit of the declaration has been carried out, in accordance with ISO 14025:2006. This verification was external and carried out by a third party on the basis of the PCR mentioned above.

Programme information

PROGRAMME:	The International EPD® System
ADDRESS:	EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden
WEBSITE:	www.environdec.com
E-MAIL:	info@environdec.com

EN 15804:2012+A2:2019/ AC:2021 serves as Product Category Rule (PCR)
Product Category Rule (PCR): PCR 2019:14 Construction Products, version 1.3.1
PCR review performed by: The Technical Committee of the International EPD® System
See list of members www.environdec.com.
The review panel can be contacted through the Secretariat www.environdec.com/contact - Contact via info@environdec.com
Independent third party audit of the declaration and data in accordance with EN ISO 14025:2006:
☐ EPD process certification ☒ EPD verification
Third-party verification: Marcel Gómez Consultoría Ambiental; Telephone: +34 630 64 35 93;
Email: info@marcelgomez.com
Approved by: The International EPD© System
The procedure for monitoring data during the lifetime of the EPD involves a third party verifier:
☒ Yes ☐ No

The owner of the EPD has sole ownership, obligation and responsibility for the EPD.
EPDs within the same product category, but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performance and use (e.g. identical declared/functional units); have equivalent system boundaries and data descriptions; apply equivalent data quality requirements, data collection methods and

allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content claims and be valid at the time of comparison. For more information on comparability, see EN 15804 and ISO 14025.

Product Description

Product description and use

This Environmental Product Declaration (EPD®) describes the impacts of 1m^2 of installed Placo® X-Ray Protection Plasterboard, 12.5 mm thick, 600 mm wide and weighing 18 kg/mg^2, with a service life of 50 years.

Placo® X-Ray Protection is a 12.5 mm thick, 600 mm wide, lead-free, double-sided gypsum plasterboard with a suitable additive for X-ray protection. Placo® X-Ray Protection board has been tested to the International Standard and certified by the Radiation Metrology Group of Public Health England for lead equivalent performance in accordance with IEC 6133-1:2014.

It is a special board that can be used in interior partitions of buildings as an alternative to lead foil for x-ray protection. Suitable for rooms with X-ray equipment in hospitals, medical centres, dental and veterinary clinics.

Technical data/physical characteristics:

Reaction to fire	A2-s1, d0
Thermal conductivity	0.25 W/m.K

Declaration of the main components and/or constituent materials of the product:

All raw materials contributing more than 5% to any environmental impact are listed in the table below.

Product components	Weight (%)	Post-consumer material, weight(%)	Weight of biogenic material in kg C/kg
Natural gypsum	30-50%	0%	0
Recycled gypsum	0%	0%	0
Paper	2-4%	100%	0.009
Other additives	50-70%	0%	0.002
Total	**100%**	**2-4%**	**0.011**
Packaging materials	**Weight (%)**	**Post-consumer material, weight(%)**	**Weight of biogenic material in kg C/kg**
Plastic	3%	0%	0%
Linen cleats	97%	0%	0.002
Total	**100%**	**0%**	**0.002**

During the product's service life, no hazardous substances included in the "Candidate List of Substances of Very High Concern (SVHC) for authorisation" have been used in a percentage over 0.1% of product weight. The programme verifier and operator have not presented any claim or bear any responsibility for the legal nature of the product.

Information for Calculating LCA

TYPE OF EPD	Cradle-to-gate with options, including modules A4-A5, modules C1-C4 and module D.
DECLARED UNIT	1m^2 of Placo® X-Ray Protection Plasterboard installed, 12.5 mm thick, 600 mm wide and weighing 18 kg/m^2, with a service life of 50 years.
SYSTEM LIMITS	Cradle-to-gate with options (A1-A3) + Modules A4-A5 + C1-C4 and module D.
REFERENCE SERVICE LIFE	The service life of the product is considered to be 50 years. This period of 50 years is the amount of time we recommend that our products last without being renovated and corresponds to the standard service life of the building design.
CUT-OFF CRITERIA	If there is insufficient information, process energy and materials accounting for less than 1% of the total energy and mass used can be excluded (if they do not cause significant impacts). The sum of all inputs and outputs excluded may not exceed 5% of the total mass and energy used, as well as generated emissions to the environment. Flows related to human activities such as transport of employees are excluded. Long-term emissions are excluded. Plant construction, machine production and transport systems are excluded, as the related flows are assumed to be insignificant compared to the production of the construction product when compared to the service life of these systems. The ICL data shall include, in accordance with EN 15804, a minimum of 95% of the total input flows (mass and energy) per module (e.g., A1-A3, A4-A5, B1-B5, B6- B7, C1-C4 and module D). In addition, this PCR applies the expanded cut-off rule of the ISO 21930 standard, which establishes at least 95% of the environmental impact per module. Plausibility assessments and expert judgment can be used to demonstrate compliance with these criteria.
ASSIGNMENTS	The allocation criteria are based on mass. The polluter pays principle, and the modularity principle are followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Europe The data are collected from Placo® production sites located in San Martín de la Vega (Madrid). Data collected for the year 2022.
SOURCE OF BACKGROUND DATA	Databases GaBi 2022 and ecoinvent v.3.8
SOFTWARE	GaBi 10

According to EN 15804:2012+A2:2019/ AC:2021, the EPDs of construction products may not be comparable if they do not comply with this standard. According to ISO 21930, EPDs may not be comparable if they belong to different programmes.

Alcance del ACV

System limits (X=included. MND=Module Not Declared)

	PRODUCT STAGE			CONSTRUCTION STAGE		USAGE STAGE							END OF LIFE STAGE				BURDENS AND BENEFITS BEYOND SYSTEM BOUNDARIES
	Raw material supply	Transport	Manufacture	Transport	Construction process - installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction-Demolition	Transport	Waste management	Landfill	Reuse-recovery
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared modules	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geographical region	EU	EU	ES	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used	>90% GWP- GHG																
Variation between products	0%																
Variation between factories	0%																

Life cycle stages

A1-A3, Product stage

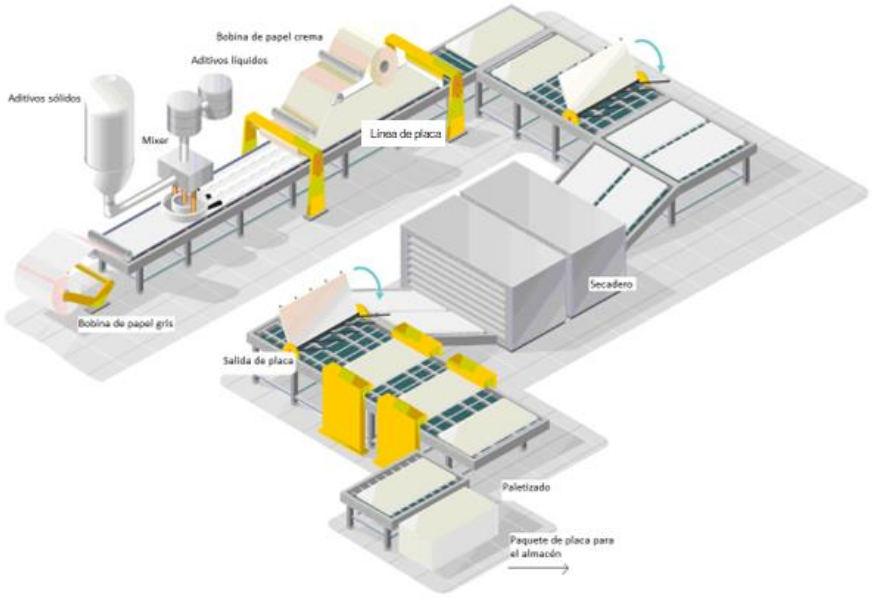
Stage description:
The product stage of laminated plasterboard is subdivided into 3 modules: A1, A2 and A3, which are "Raw material supply", "Transport to manufacturer" and "Manufacturing", respectively.

A1, raw material supply.
This includes the extraction and processing of all raw materials and energy upstream of the manufacturing process.

A2, transport to manufacturer.
The raw materials are transported to the manufacturing plant. The model includes the transport by road, ship and/or train of each raw material.

A3, manufacture.
This module includes the manufacture of products and the energy consumed. This stage takes into account the production of packaging material. It also includes the treatment of any waste arising from this stage. Production process life cycle flowchart

System diagram:



Manufacturing details:
The raw materials are homogeneously mixed in the mixer to form the gypsum paste, which is discharged through outlet sections onto a sheet of paper that is advancing on the forming belt. In parallel, a second sheet of paper is fed to form the laminated gypsum plasterboard. The laminated plasterboard continues to advance on the production line until it is hard enough to be cut. It is then dried. Finally, the product is stacked and palletised to form the laminated plasterboard package.

During the manufacture of the product, recycled gypsum plasterboard from internal rejects or waste from outside the installation can be incorporated to replace the mineral gypsum.

A4-A5, Construction process stage

Stage description: The construction process is divided into 2 modules: 'transport to the site', A4, and 'installation', A5.

A4, transport to the site

This module includes transport from the factory door to the construction site where the product will be installed. Transport is calculated based on certain characteristic parameters, which are described in the following table.

The distances have been calculated by weighting the tonnes shipped and the kilometres travelled to the different provinces included in the scope of this study.

PARAMETER	VALUE
Type of fuel and consumption of the vehicle or type of means of transport used; i.e., long-distance truck, ship, etc.	Trailer truck, with a maximum load of 27.9 t, a real load of 24 t and diesel fuel consumption of 0.38 litres per km
Distance	2515 km truck; 145 km ship
Usage capacity (including return of the transport without load)	100% (30% return empty)
Apparent density of the transported product*	1428 kg/m^3
Gypsum capacity factor, by volume	1

A5, Installation in the building: this module includes:
The attached table quantifies the parameters for installing the product on site. All installation materials and their waste treatment are included.

PARAMETER	VALUE/DESCRIPTION
Secondary materials for installation (specified by type)	Sealant 0.8 kg/m² of panel, Joint tape 3 m/m² of panel, Screws 7 per m² of panel
Water consumption	0.11 litres/m²
Consumption of other resources	None**
Quantitative description of the type of energy (regional mix) and its consumption during the installation process	None
Waste of materials at the construction site, before processing waste, generated during the installation of the product (specified by type)	10% of plasterboard waste 5% Sealant 5% Joint tape
Outflow of materials (specified by type) resulting from waste processing at the construction site; for example, during collection for recycling, energy recovery or landfill (specifying the route)	Of the 10% waste of laminated plasterboard: 5% to recycling and 95% to landfill Sealant: 0.04 kg to landfill Joint tape: 0.001 kg to landfill Packaging: 0.043kg to landfill
Direct emissions to air, soil and water	None

** That only 5% of all the waste generated at this stage goes to recycling is considered as a representative value of the current situation during product installation.*

*** The energy consumed by the drill used in the installation is ignored due to its low power consumption.*

B1-B7, Use stage (excluding possible savings)

Stage description: The use stage, related to the structure of the building, includes:

- B1, use or application of the installed product;
- B2, maintenance;
- B3, repair;
- B4, replacement;
- B5, refurbishment;
- B6, use of operational energy;
- B7 use of operational water

Description of scenarios and additional technical information:
The product has a service life of 50 years. This assumes that the product will last in situ during this period with no maintenance, repair, replacement or refurbishment requirements. Therefore, it has no impact at this stage and is declared to have 0 impact.

C1-C4 , End of life stage

Stage description: this stage includes the following modules:
C1: Deconstruction, demolition: The deconstruction and/or dismantling of the product is part of the entire building demolition process. In our case, a small amount of energy, equal to 0.05 MJ/m², is considered.
C2: Transport of the discarded product to the processing location
C3: Processing of waste for reuse, recovery and/or recycling
C4: Landfill (disposal), including the supply and transport of all materials and products, as well as the associated energy and water use.

Description of scenarios and additional end-of-life technical information:

PARAMETER	VALUE/DESCRIPTION
Waste collection process specified by type	90% of plasterboard is collected together with other mixed deconstruction and demolition waste sent to landfill (including screws and joint tape/sealant); 10% of plasterboard goes to recycling*.
Recovery system specified by type	10% recycled
Disposal, specified by type	90% to landfill
Assumptions for the development of the scenario(e.g., transport)	Waste gypsum is transported 50 km by truck from the deconstruction/demolition sites to the landfill and 150 km to the recycling plant

** That only 10% of all the waste generated at this stage goes to recycling is considered as a representative value of the current situation at the end of the product's service life.*

D, Potential reuse/recovery/recycling

10% of waste is recovered, which goes to recycling. 90% of the remaining waste is sent to the landfill.

LCA results

As specified in EN 15804:2012+A2:2019/ AC:2021 and the Product Category Rules, environmental impacts are declared and reported using the ILCD baseline characterisation factors. The specific data have been provided by the plant and the generic data come from the GaBi and ecoinvent databases.

All emissions to air, water and land and all materials and energy used have been included.

The estimated impact results are only relative statements that do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins or risks.

All figures refer to a declared installed unit of 1m^2 of Placo® X-Ray Protection Plasterboard, 12.5 mm thick, 600 mm wide and weighing 18 kg/m^2, with a service life of 50 years.

The following results are for a single product manufactured in a single plant:

Environmental impacts

Environmental indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USAGE STAGE							END OF LIFE STAGE				REUSE RECOVERY RECYCLING
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction/ Demolition	C2 Transport	C3 Waste processing	C4 Landfill	D Reuse, recovery, recycling
Climate Change [kg CO2 eq.]	3,27E+00	2,24E+00	7,83E-01	0	0	0	0	0	0	0	8,71E-02	5,68E-02	1,55E-02	1,04E+00	-4,49E-03
Climate change (fossil) [kg CO2 eq.]	4,06E+00	2,23E+00	7,67E-01	0	0	0	0	0	0	0	8,70E-02	5,62E-02	1,55E-02	2,66E-01	-4,46E-03
Climate change (biogenic) [kg CO2 eq.] [kg CO2 eq	-7,89E-01	-3,72E-03	1,40E-02	0	0	0	0	0	0	0	1,15E-04	9,51E-05	6,00E-05	7,74E-01	-1,08E-05
Climate Change (land use change) [kg CO2 eq.]	5,38E-03	1,79E-02	2,68E-03	0	0	0	0	0	0	0	1,91E-06	4,57E-04	2,72E-05	7,65E-04	-1,42E-05
Ozone layer depletion [kg CFC-11 eq.]	9,72E-08	2,69E-16	9,75E-09	0	0	0	0	0	0	0	9,25E-18	9,46E-18	5,68E-10	9,86E-16	-5,81E-17
Terrestrial and freshwater acidification [Mole of H+ eq.]	1,34E-02	1,40E-02	3,44E-03	0	0	0	0	0	0	0	2,56E-04	3,26E-04	7,30E-05	1,91E-03	-3,17E-05
Freshwater eutrophication [kg P eq.]	3,48E-04	6,71E-06	4,12E-05	0	0	0	0	0	0	0	1,92E-08	1,72E-07	6,80E-06	4,57E-07	-1,28E-08
Freshwater eutrophication [kg (PO4)3 eq.]	1,07E-03	2,06E-05	1,26E-04	0	0	0	0	0	0	0	5,90E-08	5,27E-07	2,09E-05	1,40E-06	-3,94E-08
Marine eutrophication [kg N eq.]	3,97E-03	6,45E-03	1,27E-03	0	0	0	0	0	0	0	4,76E-05	1,57E-04	1,42E-05	4,91E-04	-1,48E-05
Terrestrial eutrophication [Mole of N eq.]	4,48E-02	7,13E-02	1,39E-02	0	0	0	0	0	0	0	5,22E-04	1,74E-03	1,43E-04	5,39E-03	-1,68E-04
Photochemical ozone formation - human health [kg NMVOC eq.]	1,85E-02	1,25E-02	3,67E-03	0	0	0	0	0	0	0	1,50E-04	2,97E-04	3,82E-05	1,49E-03	-4,14E-05
Use of resources, minerals and metals [kg Sb eq.][1]	1,85E-04	1,59E-07	2,12E-05	0	0	0	0	0	0	0	2,27E-09	4,43E-09	2,38E-08	2,39E-08	-9,04E-10
Resource use, energy carriers [MJ][1]	6,08E+01	2,98E+01	1,09E+01	0	0	0	0	0	0	0	1,06E+00	7,52E-01	2,35E-01	3,49E+00	-5,89E-02
Water deprivation potential [m³ world equiv.][1]	1,56E+01	1,98E-02	1,66E+00	0	0	0	0	0	0	0	1,80E-04	5,39E-04	4,22E-03	2,79E-02	-9,69E-05

[1] The results of this environmental impact indicator should be used with caution, as the uncertainties of the results are high and experience with this parameter is limited

Use of resources

Indicators of resource use	PRODUCT STAGE	CONSTRUCTION STAGE		USAGE STAGE							END OF LIFE STAGE				REUSE RECOVERY RECYCLING
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction/ Demolition	C2 Transport	C3 Waste processing	C4 Landfill	D Reuse, recovery, recycling
Use of primary energy renewable (PERE) [MJ]	2,95E+00	1,65E+00	1,48E+00	0	0	0	0	0	0	0	3,71E-03	4,32E-02	1,97E-02	4,57E-01	-1,53E-02
Use of primary energy renewable used as raw material (PERM) [MJ][2]	9,94E+00	0	9,94E-01	0	0	0	0	0	0	0	0	0	0	0	0
Total use of primary energy renewable (PERT) [MJ]	1,29E+01	1,65E+00	2,47E+00	0	0	0	0	0	0	0	3,71E-03	4,32E-02	1,97E-02	4,57E-01	-1,53E-02
Use of primary energy non-renewable (PENRE) [MJ]	6,04E+01	2,98E+01	1,09E+01	0	0	0	0	0	0	0	1,06E+00	7,55E-01	2,37E-01	3,49E+00	-5,89E-02
Use of primary energy non-renewable as raw material (PENRM) [MJ][2]	4,27E-01	0	4,27E-02	0	0	0	0	0	0	0	0	0	0	0	0
Total use of primary energy non-renewable (PENRT) [MJ]	6,09E+01	2,98E+01	1,09E+01	0	0	0	0	0	0	0	1,06E+00	7,55E-01	2,37E-01	3,49E+00	-5,89E-02
Use of secondary materials(SM) [kg]	4,88E-01	0	5,68E-02	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ][3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ][3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net use of freshwater resources (FW) [m3][3]	3,65E-01	1,91E-03	3,91E-02	0	0	0	0	0	0	0	6,60E-06	5,03E-05	9,83E-05	8,80E-04	-1,00E-05

[2] For this study, both the product and its packaging are reported in the "Use of primary energy renewable used as raw material (PERM)" and "Use of primary energy non-renewable" used as raw material (PENRM) indicators. PERM and PENRM are expressed as negative values when materials are recycled or recovered, but not when they are landfilled.

[3] The results of this environmental impact indicator should be used with caution, as the uncertainties of these results are high or experience with the indicator is limited.

Category of waste and other outflows

	PRODUCT STAGE	CONSTRUCTION STAGE		USAGE STAGE							END OF LIFE STAGE				REUSE RECOVERY RECYCLING
Category of waste and other outflows	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction/ Demolition	C2 Transport	C3 Waste processing	C4 Landfill	D Reuse, recovery, recycling
Hazardous waste disposed (HWD) [kg]	4,14E-07	1,37E-06	2,09E-07	0	0	0	0	0	0	0	1,08E-10	3,50E-08	6,22E-12	5,32E-08	-1,12E-09
Non-hazardous waste disposed (NHWD) [kg]	3,03E-02	4,54E-03	1,86E+00	0	0	0	0	0	0	0	2,63E-04	1,19E-04	1,80E+00	1,71E+01	-2,44E-05
Radioactive waste disposed (RWD) [kg]	8,95E-05	3,69E-05	4,16E-05	0	0	0	0	0	0	0	1,22E-06	1,28E-06	3,71E-08	3,97E-05	-2,05E-06
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling (MFR) [kg]	4,90E-01	0	1,89E-01	0	0	0	0	0	0	0	0	0	1,80E+00	0	0
Materials for energy recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy electrical (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy thermal (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Additional voluntary indicators of EN 15804 (according to ISO 21930:2017)

	PRODUCT STAGE	CONSTRUCTION STAGE		USAGE STAGE							END OF LIFE STAGE				REUSE RECOVERY RECYCLING
Environmental indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction/ Demolition	C2 Transport	C3 Waste processing	C4 Landfill	D Reuse, recovery, recycling
Climate Change [kg CO2 eq.][4]	4,06E+00	2,23E+00	7,67E-01	0	0	0	0	0	0	0	8,70E-02	5,62E-02	1,55E-02	2,66E-01	-4,46E-03

Information on biogenic carbon content

	USAGE STAGE
Biogenic carbon content	**A1 / A2 / A3**
Biogenic carbon contained in the product [kg]	1,97E-01
Biogenic carbon contained in the packaging [kg]	1,78E-02

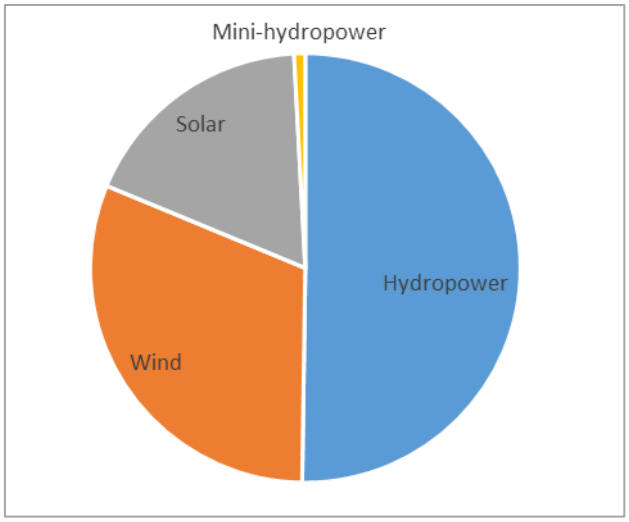
Note: 1 kg of biogenic carbon is equivalent to 44/12 kg CO2.

The product contains biogenic carbon due to certain additives and the paper used. For packaging, the biogenic carbon due to the production of linen cleats is quantified.

Additional information:

Electricity description

TYPE OF INFORMATION	DESCRIPTION
Location	Electricity purchased by Placo® Spain
Description of the geographical representativeness	Energy sources: Conventional hydraulics 50.2% Wind 31.0% Solar 17.9% Mini-hydro 0.8%
Year of reference	2022
Type of data set	Cradle to Gate from Gabi and ecoinvent databases
Source	Guarantee of Origin certificates (GOs) - 2022
Emissions of CO_2 kg CO_2 eq. kWh	0 kg of CO_2 eq/kWh Based on GDO/DE/001/23 Electricity Labelling 2022



Data quality

The quality of the inventory data is judged by geographical, temporal and technological representativeness. To meet these requirements and ensure reliable results, first-hand industry data were used in conjunction with LCA background datasets. Data were collected from internal records and location information documents. After assessing the inventory, according to the classification defined in the LCA report, the assessment reflects a good quality of the inventory data.

Recycled content

Saint-Gobain Placo Ibérica declares that in accordance with UNE EN IS0 14021, the recycled content[1] of the Placo® X-Ray Protection product is as follows:

Pre-consumer[2]: 2-4%

Post-consumer[3]: 0%

1 Recycled content: The proportion, by mass, of recycled material in a product or package. Only pre-consumer and post-consumer materials should be considered as recycled content, consistent with the use of the following terms:

2 Pre-consumer: material derived from the waste stream during a manufacturing process. The reuse of reprocessed material, scraps or remnants, generated in a process and which have the capacity to be recovered (returned) to the same process that generated them, is excluded.

3 Post-consumer: material generated by households or by businesses, industrial and institutional facilities in their role as end-users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Changes from the previous version

The differences between the new version of the LCA study and the previous one are detailed below:

- The electricity mix based on certified green energy has been updated according to the information provided by the supplier.
- Life cycle assessment software changes to Gabi, version SP40 (2020) (previous version used SimaPro software).
- Change in the databases used. The previous version used Ecoinvent 3.5 and the new version uses the Thinkstep 9.2 or Ecoinvent 3.6 databases.

References

1. ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework.
2. ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
3. ISO 21930:2017 Sustainability in buildings and civil engineering works. Basic standards for environmental claims for construction products and services.
4. ISO 14021:2002 Eco-labels and environmental claims. Environmental self-declarations (Type II Ecolabelling).
5. ISO 14025:2006 Environmental labels and declarations - Environmental declarations type III - Principles and procedures.
6. EN 15804:2012+A2:2019/ AC:2021 Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.

7. EPD International. General Program Instructions (GPI) for the International EPD® System (version 4.0) www.environdec.com.
8. The International EPD System PCR 2019:14 Construction Products and Construction Services. Version 1.3.1
9. European Chemicals Agency, Candidate List of Substances of Very High Concern for Authorisation.

   http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.as
10. LCA Report Gypsum plasterboard 2023